

**etap**<sup>®</sup>

# **ArcFlash**<sup>™</sup>

Digital Twin Driven Power System Analysis  
Improve Safety & Maintain Compliance



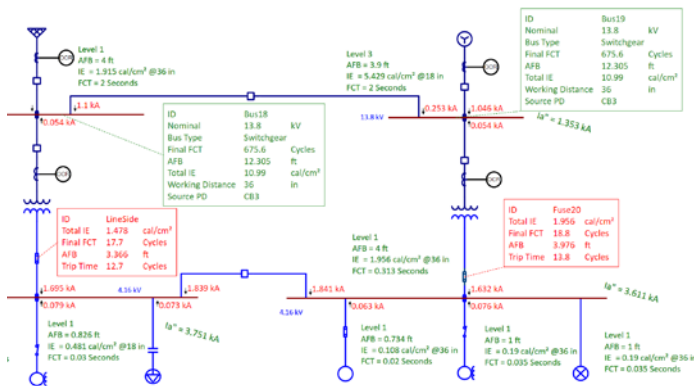
Improve safety, reduce risk, minimize equipment damage, and validate mitigation techniques using all-in-one solution AC & DC arc flash for LV & MV systems.

- ✓ Calculate incident energy at multiple locations
- ✓ Worst-case arc flash scenario evaluation
- ✓ Arc flash labels, study data sheets & work permits
- ✓ Hazard evaluation for shock protection & PPE
- ✓ Integrated with Star-Auto Evaluation & TCC views
- ✓ Identify mis-operation due to arc flash

## AC Arc Flash

Identify and analyze high risk arc flash areas in electrical power systems with greater flexibility by simulating and evaluating various mitigation methods.

- IEEE 1584-2018
- NFPA 70E
- PPE requirements approval
- Customizable electrical work permits
- Safety labels in multiple languages



## Arc Flash Auto-Evaluation

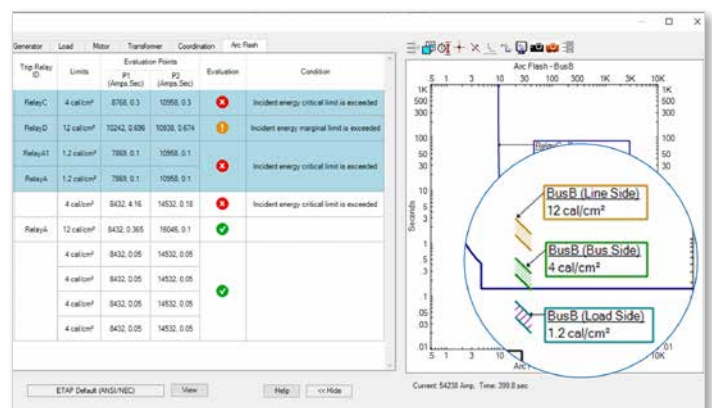
Time-saving tool to automatically assess, evaluate, and graphically present arc flash incident energy levels at different fault locations.

- Automated arc flash energy evaluation
- Rule-based incident energy boundary evaluation
- Arc-damage point evaluation per IEEE C37.20.7
- Graphical evaluation with warnings & alerts

## DC Arc Flash

Calculate the incident energy for direct current applications: mission critical facilities, substation battery banks, photovoltaic plants, nuclear plants, and transportation systems.

- Incident energy & shock protection boundary calculations
- Maximum Power, Stokes & Oppenlander, Paukert methods
- NFPA 70E 2018 Annex D.5.1 to D.5.3



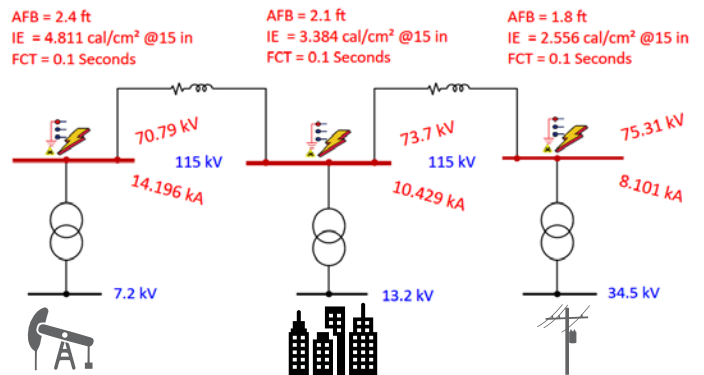
Recommended solution for performing arc flash analysis at 15 kV and above for electrical transmission & distribution utilities and renewable systems.

- ✓ Automatic arc fault current & duration calculations
- ✓ Verified & Validated against industry standards
- ✓ Batch analysis & evaluation with a single click
- ✓ Graphical simulation of arc faults
- ✓ Open-air arcing fault evaluation
- ✓ Arc-in-a-box for enclosed equipment

### High Voltage Arc Flash

Arcing fault hazard evaluation for high voltage systems automatically determines the working distance and minimum-approach distance, based on the system voltage, transient overvoltage conditions, and altitude.

- OSHA 1910.269
- National Electrical Safety Code - NESC
- LG, LL, 3-phase arc faults
- Arc-in-a-box - 15 kV to 36 kV
- Applicable for 1 kV to 800 kV



### Arc Flash Calculators

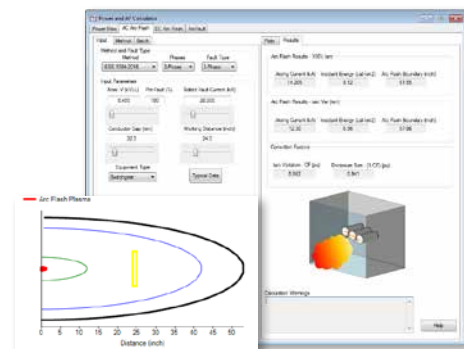
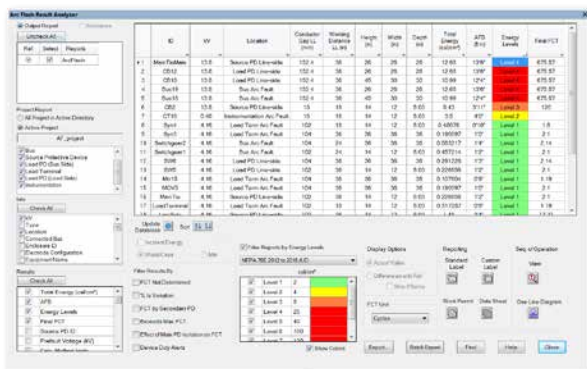
Powerful graphical tool for rapid assessment of multiples or batches of 'what if' scenarios.

- IEEE 1584-2018
- IEEE 1584-2002 CL Fuse & Breaker
- DC Arc Flash
- High Voltage Arc Flash – OSHA, NESC
- BGI / GUV 5188E - German standard
- ENA NENS 09-2014 Australian Standard

### Result Analyzer

Compare and filter multiple arc flash analysis results from different cases in a single display and determine the worst-case scenario.

- Multi-report result analyzer
- Tabular display of arc flash results per energy levels
- Export customized results to Excel
- Color code & filter results by various categories



Analyze system protection and troubleshoot false trips, relay and breaker mis-operation, mis-coordination, and more.

- ✓ Time-Current Characteristic (TCC) Curve
- ✓ Protective Device Coordination & Selectivity
- ✓ Sequence-of-Operation
- ✓ Protection Zone Selection & Viewer
- ✓ Automated Protection & Coordination
- ✓ Zone Selective Interlock Scheme
- ✓ Protective Device Design Assessment
- ✓ Verified & Validated Protective Device Libraries

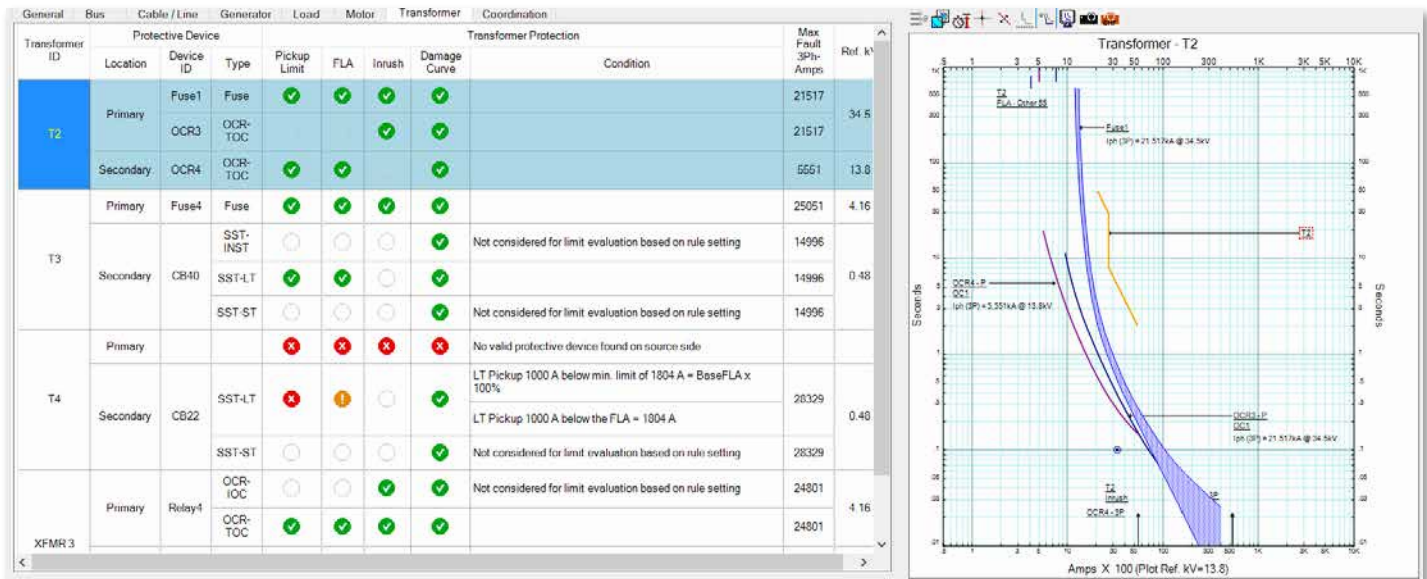
## StarZ™ - T&D System Protection & Coordination

Gain insight into line protection, protective relay performance & evaluation, troubleshooting false trips, and system-wide protective device operation.

## Star Auto - Automated Protection & Coordination

Rule-based design and automatic protection & coordination evaluation based on customized design criteria and industry guidelines to reduce months of work to a few hours.

- Automated & intelligent detection of protection zones
- Automated Overcurrent Protection & Coordination Evaluation
- Support of NEC, IEEE, IEC standards & industry practice rules
- Customized evaluation criteria based on Star RuleBook™



Boost productivity & save time with automated protection & selectivity